AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A ~~method of~~device for treating a volume of biological tissue by localized hyperthermia, the device including a plurality of active percutaneous electrodes (1-N), at least one return electrode (120), and a high frequency electricity generator (100) suitable for applying an alternating voltage between the active electrodes (1-N) and the return electrode (120), ~~the device being characterized in that~~wherein the generator (100) is suitable for feeding each active electrode (1-N) independently of the others including means (20) for adjusting the amplitude and the phase of the voltage applied to each active electrode (1-N), such that the parameters of the voltage and the phase applied to each active electrode ~~can be~~is adjusted in an independent manner, thus generating electric currents propagating between the active electrodes (1-N) within the volume of biological tissue.

2. (Cancelled)

3. (Currently Amended) ~~A~~ The device according to claim 2, ~~characterized in that~~wherein the generator is suitable for applying voltages to two active electrodes i and j that present respective amplitudes V_i and V_j with a phase difference Φ_{ij} between the voltages that is equal to:

$$\Phi_{ij} = a\cos\left(\frac{V_i^{\,2} + V_j^{\,2} - \Delta^2}{2V_i \bullet V_j}\right), \Delta \in \left\lfloor \left|V_j - V_i\right| V_i + V_j \right\rfloor$$

where Δ is a desired potential difference between the electrodes i and j, and V_i is the amplitude of the potential difference between the i^{the} electrode and the return electrode.

4. (Currently Amended) ~~A~~ The device according to ~~any preceding~~ claim 1, ~~characterized in that~~ wherein the electricity generator (100) is a multichannel voltage generator.

5. (Currently Amended) ~~A~~ The device according to ~~any preceding~~ claim 1, ~~characterized in that~~wherein the generator (100) includes a set of manually or automatically controlled switches (60), the switches being suitable for independently activating or deactivating feed to one or more electrodes.

6. (Currently Amended) ~~A~~ The device according to ~~any preceding~~ claim 1, ~~characterized in that it~~ includinges a plurality of active electrodes (1-N) disposed at equal distances from a percutaneous return electrode (120).

7. (Currently Amended) ~~A~~ The device of ~~according to any preceding~~ claim 1, ~~characterized in that it~~ hav[[s]]ing an even number of active electrodes (N=2p, for integer p).

8. (Currently Amended) ~~A~~ The device according to claims 6 and 7, ~~characterized in that it~~ hav[[s]]ing six active electrodes (1-6) distributed in uniform manner in a cylindrical configuration, the return electrode being disposed at the center of the cylinder.

9. (Currently Amended) ~~A~~ The device according to ~~any one of claims~~ claim 6~~, 7, and 8~~, ~~characterized in that~~wherein the generator (100) is suitable for providing feed voltages presenting phase differences that alternate between consecutive pairs of electrodes.

10. (Currently Amended) ~~A~~ The device according to claim 6 ~~or claim 7~~, ~~characterized in that~~ wherein the generator (100) is suitable for supplying feed voltages presenting equal phase differences between successive pairs of electrodes.

11. (Currently Amended) ~~A~~ The device according to ~~any preceding~~ claim 1, ~~characterized in that it~~ includ[[es]]ing an additional, external return electrode (11), in particular in the form of a cutaneous conductive plate.

12. (Currently Amended) ~~A~~ The device according to ~~any preceding~~ claim 1, ~~characterized in that it~~ includ[[es]]ing means for measuring impedance between electrodes and/or means for taking local temperature measurements, and means for controlling the applied voltages as a function of the impedance and/or temperature measurements taken.

13. (Currently Amended) A method of treating a volume of biological tissue by localized hyperthermia, the method comprising ~~the~~ steps ~~consisting in~~of:

positioning a plurality of active percutaneous electrodes (1-N) and at least one return electrode (120) in the tissue to be treated; and

applying an alternating voltage between the active electrodes (1-N) and the return electrode (120) by means of a high frequency electricity generator (100);

~~the method being characterized in that~~wherein for each active electrode (1-N) being fed independently of the others, the method also comprises the step ~~consisting in~~of adjusting the parameters of the voltage applied to each active electrode (1-N) by determining and setting the amplitudes V_i and the phases Φ_i of the voltages applied to the electrodes, thus generating electric currents propagating between the active electrodes (1-N) within the volume of biological tissue.

14. (Currently Amended) [[A]]The method according to claim 13, ~~characterized in that~~ wherein the active electrodes (1-N) are disposed in a cylindrical configuration around the percutaneous return electrode (120).

15. (Currently Amended) [[A]]The method according to claim 14, ~~characterized in that~~wherein six active electrodes (1-6) are distributed uniformly around a cylindrical configuration, the return electrode (120) being disposed in the center of the cylinder.

16. (Currently Amended) [[A]]The method according to ~~any one of~~ claim[[s]] 13~~ to 15~~, ~~characterized in that~~wherein the step ~~consisting in~~of adjusting the parameters of the voltage applied to each active electrode (1-N) includes independently activating and deactivating the feed to one or more electrodes.

17. (Cancelled)

18. (Currently Amended) [[A]]The method according to claim ~~17~~13, ~~characterized in that~~wherein the phases Φ_i of the voltages applied to the electrodes (1-N) are determined in application of the steps ~~consisting in~~of:

defining, for two electrodes i and j, amplitude values V_i and V_j for the voltages that are applied respectively thereto, and also defining a potential difference A that is desired between the electrodes i and j; and

deducing therefrom a phase difference Φ_{ij} between the voltages applied to the electrodes i and j in application of the following relationship:

$$\Phi_{ij} = a\cos\left(\frac{V_i^2 + V_j^2 - \Delta^2}{2V_i \bullet V_j}\right), \Delta \in \left\lfloor |V_j - V_i| V_i + V_j \right\rfloor$$

19. (Currently Amended) [[A]]The method according to claim ~~17~~13, ~~characterized in that~~wherein the active electrodes (1-N) are disposed in a cylindrical configuration around the return electrode, and the generator (100) is controlled to deliver feed voltages presenting alternating phase differences between consecutive pairs of electrodes.

20. (Currently Amended) [[A]]The method according to claim ~~17~~13, ~~characterized in that~~wherein the active electrodes (1-N) are disposed in a cylindrical configuration around the return electrode, and the generator (100) is controlled to supply feed voltages presenting equal phase differences between successive pairs of electrodes.